

## Brief Write-up of The Unit

### Unit Profile



**BILT Ballarpur Industries Ltd.** is the largest paper manufacturing group having six paper-manufacturing units all over India with 4.5 lac MT p.a. capacity along with a new global acquisition at SABAH- MALAYSIA with capacity of 1.5 lac MT p.a.

BILT-Unit Ballarpur is the largest unit of **Ballarpur Industries Limited**. This unit is a pioneer in the manufacture of wide range of high quality writing and printing papers for the wide range of prestigious end users.

The brand names of our unit are Maplitho NSD premium SF & HB, Sunlit Bond, Sun Shine Super Printing, Cream Wove, ESKP, T.D, AR and AF Poster duplicating semi absorbent ledger, Coating base Maplitho etc.

It is an **integrated Pulp and Paper Mill** with 6 Paper Machines having its own pulp manufacturing facilities along with chemical recovery process plant. Hence it has larger infrastructure comparing to the paper mills manufacturing paper from purchased pulp. The operating capacity of the unit has been brought up to 1,28,000 MT p.a. without any major investment.

Bilt unit Ballarpur is planning to increase its production capacity from 1.28 lac MT to 2.5 lac MT per annum by bringing a new single paper machine of 500 TPD and shutting of 2 old paper machines along with new Power Plant, Pulp mill and Recovery sections.

Unit has received several **National & State level Awards** for “**Excellence in Energy Conservation and Management**”.

### ENERGY CONSUMPTIONS

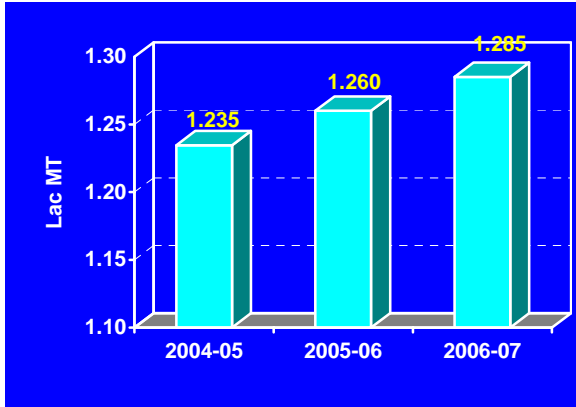
There is a continuous decline in Specific energy consumption due to regular improvement & implementation of energy conservation ideas in the unit.

Description	Unit	2004-2005	2005-2006	2006-2007
Annual Production	MT	123466	126009	128504
Total Electrical Energy Consumption / annum	Lakhs kWh	2238.659	2244.319	2220.650
Specific Energy Consumption - Electrical	kWh / MT	1055	1039	1013
Total Thermal (fuel) Consumption / annum	MKCal	916697	935553	943981
Specific Energy Consumption - Thermal (fuel)	MKCal / MT	7.425	7.424	7.346
Total Paper Manufacturing Cost	Rs /MT	21610	22334	24254
Total Energy cost	Rs /MT	3619	3753	4796
Energy Cost as % of Manufacturing cost	%	16.75	16.80	19.77 **

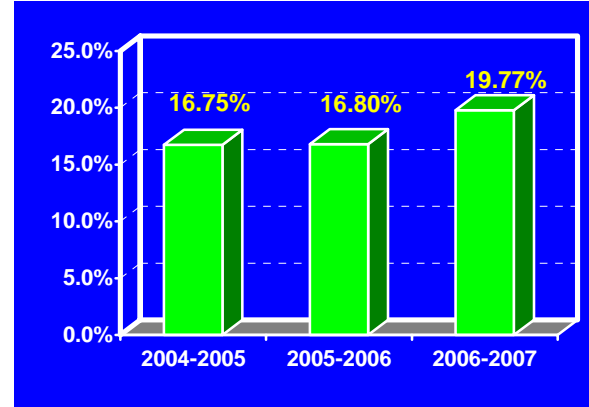
\*\* Impact of increased MSEB grid power price.

## Production and Energy Cost Trend

**Paper Production in Continuous increasing trend (lac MT)**



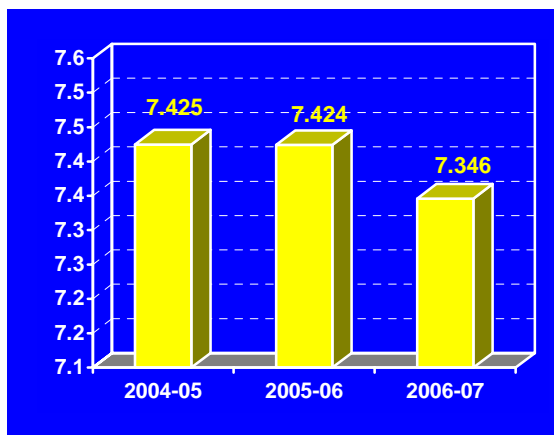
**Reduction In Energy Cost : % of total Manufacturing Cost**



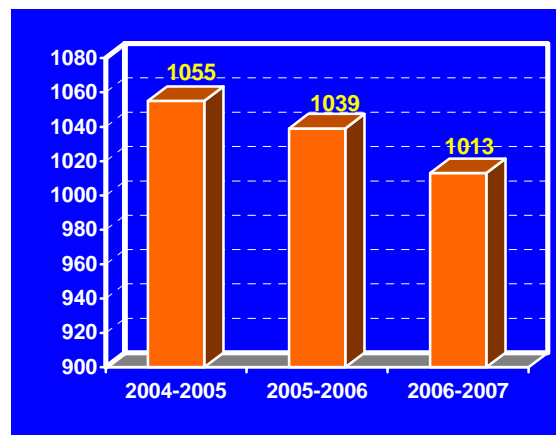
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## Specific Energy Consumptions Trend

**Sp. Thermal Energy Consumption (M kcal/ MT)**



**Sp. Electrical Energy Consumption (kWh/ MT)**



## Energy Conservation Commitment, Policy & Organizational Set up

Unit: Ballarpur is committed for reducing the energy consumptions thr'o effective utilization and continuous improvement. Company has independent Energy Conservation Cell setup, headed by a full time Energy Manager, constituting Process & Engineering faculties.

Our unit has Energy Management Policy.

### **Energy Management Policy** **Ballarpur Industries Limited, Unit - Ballarpur**

*Communication, Culture & Commitment are the key driving Forces for us in making "Conservation of Energy – A way of Life" at our works.*

*The simplicity in our approach, thus inspires our actions, which broadly includes :*

- *Identify & communicate ECO's – Energy Conservation Opportunities and continuous improvement of the process.*
- *Introduce site-specific conservation measures and re-examine their effectiveness periodically.*
- *As a part of our Energy Conservation Strategy, we are committed to reduce our specific Energy Consumption regularly to be the Best in paper industry having similar operations in India.*
- *Impart regular training to create awareness and align the commitment at all levels*
- *Top Management commitment & regular reviews to ensure continual improvement*

*Let each one of us participate enthusiastically to succeed and sustain this mission in making Unit Ballarpur the pace setter in the area of Energy Conservation.*

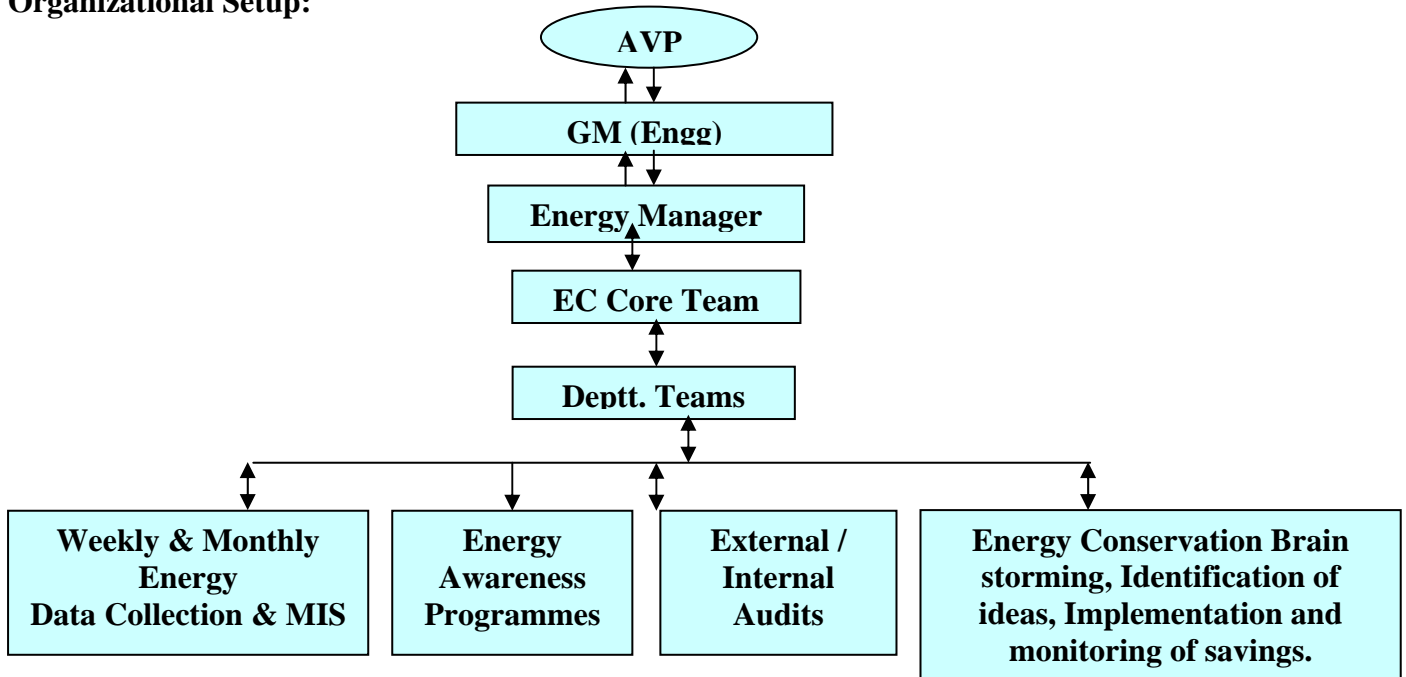
  
**Dr. Ashok Kumar**

*Unit Head*



*Dec 2, 2006*

## Organizational Setup:



We have celebrated Energy Conservation Week from 14<sup>th</sup> to 20<sup>th</sup> Dec-06 in which several programmes such as awareness, energy quiz, slogan and painting competitions were conducted.



Energy Conservation Campaign by school children



Energy Quiz Competition



Painting Competition



Releasing of EC Tips pocket book

calao AMQakar haonao sao phlao  
jaaga jaaem !

Slogan Competition

**Energy Conservation Achievements Year 2006-07**

**Major Projects Implemented During The Year 2006-07**

**Project No. 1**

***Shutting of one pulper and pump by diverting Jagenberg trim to PM-6***

**Before:** One pulper & pump was running for Jagenberg Rewinder trims.

**After:** The trims diverted towards PM-6 under Pulper & one Pulper & pump kept shut.

Power saved = 378000 kWh /yr  
Money Saved = Rs. 7.5 lacs / yr  
Investment = 0.30 lacs



**Project No. 2**

***Common Refining on PM-1 & 6.***

**Before:** Separate refining was being carried out on both m/c's.

**After:** System modified by providing the pipeline from SP-6 to SP1 & PM-1 m/c refiner kept shut.

Power saved = 496800 kWh /yr  
Money Saved = Rs. 9.8 lacs / yr  
Investment = 0.40 lacs

PM-1

PM-6



**Project No. 3**

***Common Refining on PM-2 & 5.***

**Before:** Separate refining was being carried out on both m/c's.

**After:** System modified by providing the pipeline from SP-2 to SP-5 & PM-5 m/c refiner kept shut.

Power saved = 662400 kWh /yr  
Money Saved = Rs. 13.1 lacs / yr  
Investment = Rs. 0.50 lacs



**Project No. 4**

***Common Refining on PM-3 & 4.***

**Before:** Separate refining was being carried out on both m/c's.

**After:** System modified by providing the pipeline from SP-3 to SP-4 & PM-4 m/c refiner kept shut.



Power saved = 210000 kWh /yr  
 Money Saved = Rs. 4.2 lacs / yr  
 Investment = Rs. 0.30 lacs

**Project No. 5**

***Replacement of one no inefficient vacuum pump on PM-1.***

**Before :** Vacuum pump for tubes was running with 132 kWh power.

**After :** The new same capacity pump installed with running power of 107 kWh.

Power saved = 210000 kWh  
 Money Saved = Rs. 4.2 lacs / yr  
 Investment = Rs. 5.0 lacs



**Project No. 6**

***Decker feed pump 225 kW replaced with 110 kW pump after modifying the system.***

**Before:** 225 kW feed pump was consuming 180 kWh power.

**After:** System modified 110 kW pump running load is 90 kWh

Power saved = 756000 kWh /yr  
 Money Saved = Rs. 15 lacs / yr  
 Investment = 6.0 lacs



**Project No. 7**

***Installation of lighting energy savers.***

Lighting Energy saver installed at 8 locations.

Power saved = 236520 kWh/yr  
 Money Saved = Rs. 4.7 lacs / yr  
 Investment = Rs. 12.5 lacs.



**Project No. 8**

***Power saving by reducing PP-3 transformer voltage.***

PP-3 auxiliary transformer voltage reduced resulted in saving of 24 kWh.

Power saved = 201600 kWh /yr  
 Money Saved = Rs. 4 lacs / yr  
 Investment = Nil



Other EC Ideas implemented during the year 2006-07

S.No.	Description	Energy Saving	Saving in Rs. lacs	Investment Rs. lacs
1	Shutting of one 15 kW backwater pump in screw press.	37800 kWh/Yr	0.75	Nil
2	Digester house gland sealing water one pump stopped after line modification resulted in power saving.	46656 kWh/Yr	0.92	Nil
3	Reduction in water pumping power.	587846 kWh/Yr	11.6	Nil
4	Reduction in power consumption by optimizing operations & increasing Production.	1670552 kWh/Yr	33.0	50
5	Reduction in digester steam consumption resulted in coal saving.	2562 MT /Yr Coal saved	41	Nil
6	Reduction in steam consumption in Paper M/c & Recovery section.	4000 MT /Yr Coal saved	64	15
7	Reduction in steam radiation & other Losses.	446 MT /Yr Coal saved	7.14	25

Energy Conservation Plans and Targets:-

Energy Conservation Measures (Planned)	Anticipated savings in		Approx. investment (Rs.lakhs)	Project Commencement & Completion year
	Energy Value	Rs. Lakhs		
	Million k Cal			
Modification of Steam condensate system on PM-6 to utilize flash steam	4771	30	50	2007-08
Installation of VFD for Pulp Mill Washers	769	25	35	2007-08
Installation of VFD In various pumps & cutters	487	11	22	2007-08
Replacement of inefficient motors	311	7	20	2007-08
Centralized air drying unit for compressed air	278	8	40	2007-08
Installation of VFD's in RB-1 BL firing, Mill water and Blow tank pumps	793	18	23	2007-08
Reduction of fresh water consumption	10 M <sup>3</sup> / MT	36	25	2007-08
Installation of Lime mud re-burning system	----	** 0	1750	2007-08
Installation of Producer gas system for Lime Kiln	----	625	590	2007-08
Installation of Air preheater on Coal Boiler 4 & 6.	2900	14	13	2008-09
Voltage optimisation in Transformers	1115	26	10	2008-09
Installation of New high capacity Paper Machine	11686	54		2008-09
Coal boiler No. 6 conversion to FBC	65.42	275	600	2008-09

- To be implemented for Cleaner environment and minimizing solid waste.

## Environment & Safety



At Unit Ballarpur, Environment Management is a priority area. We had received Silver Award for Excellence in Environment Management for the year 2006-07, from Greentech Foundation, New Delhi, a national level renowned NGO.

Various effective measures taken to control pollution at source like efficient pulp washing system, DCS process control for optimising chlorine consumption, reducing molecular chlorine by using chlorine dioxide and oxygen in bleaching process, replacing calcium hypochlorite with hydrogen peroxide, use of eco friendly inputs,

cooking aid to reduce chemical consumptions, spills collection and reuse systems, good house keeping etc. We are efficiently operating a state-of-the-art Effluent Treatment Plant based on Activated Sludge Process. The treated effluent meets Maharashtra Pollution Control Board's effluent discharge norms. Treated effluent used in the process, gardening in ETP and other mill area. The treated effluent is utilised for land irrigation by the farmers.

We are installing a state of the art limekiln with the investment of Rs. 30 crores for recycling lime mud, a solid waste. Mill is also in the process of adopting eco-friendly technologies of ODL (Oxygen De-Lignification) and ECF Bleaching (Elemental Chlorine Free) technology. The project is under installation state and expected to be completed in year 2008.



We have taken various measures to reduce water consumption. Unit Ballarpur water consumption is less than 120 m<sup>3</sup>/T of paper, which is lower than national norms. Mill is actively working towards water conservations programs through Reduce, Recycle and Reuse (3-R) methodologies.

Unit Ballarpur has provided efficient Electro Static Precipitators to Coal Boilers and Recovery Boilers to control the emissions below State Pollution Control Board specifications. Tall chimneys of the boilers help in dispersion and hence reduce pollution. We have scrubbers for bleach plant, hydrochloric acid plant and sulphur dioxide plant which is working effectively and efficiently. We are disposing all solid waste in gainful manner.

We have profuse greenery in and around mills, beautiful garden and lush green lawns on our lime sludge dumps, colony, Mills areas and ET Plant area. We have more than 2.40 Lakh standing trees and saplings planted in our mills and colony area. These provide more than 40% green cover as assessed by Forest Department, Government of Maharashtra.



Mill has developed about 50 kilometers of Avenue Plantation along with Ballarpur Nagpur Highway, at Ballarpur, Chandrapur, Visapur, Ghodpeth, Nadori, Bhadravati etc. Every year we are doing about 5 km avenue plantations.

Under farm forestry activities, we have a full fledge separate department looking into the production and distribution of high quality eucalyptus clones suitable to the local climate.

*Unit Ballarpur has well equipped Environmental Monitoring Laboratory and trained staff with facilities like, Spectrophotometer, Flame Photometer, BOD & COD Analysis, Weather Monitoring Station, Stack Monitoring Kit, High Volume Air Samplers, Handy Air Sampler etc.*

We have conducted various in-house training programs to enhance awareness level towards Energy and environment for worker and management staff. World Environment Day was celebrated by organising plantation activities, essay competition, drawing competition etc.

Various environmental up-gradation projects are in progress at Unit Ballarpur with the investment of more than Rs. 5000 Lacs. This will help in improving overall environmental performance of Unit Ballarpur.

**SAFETY:** Bilt Ballarpur has full-fledged Safety Department to look after the safety requirements of the plant & employees. National Safety day is being celebrated every year on 4th March. Departmental safety committees are formed & regular meetings are being conducted for day-to-day requirements & improvements. Internal & external Safety Audit & health checks are also conducted at scheduled intervals. On site Emergency plan exists. Work permit system, Mock Drills, House Keeping regular training etc are the main activities for ensuring safety.